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AGO ltr 29 Apr 1980

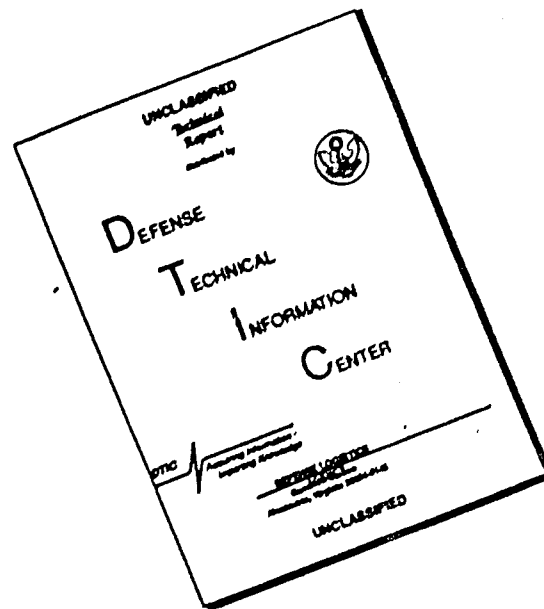
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OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M)(23 Dec 68)

FOR OT UT 683137

27 December 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 93d Engineer Battalion (Const) for Period Ending 31 July 1968

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2. Information contained in this report is provided to insure that the Army realizes current benefits from lessons learned during recent operations.
3. To insure that the information provided through the Lessons Learned Program is readily available on a continuous basis, a cumulative Lessons Learned Index containing alphabetical listings of items appearing in the reports is compiled and distributed periodically. Recipients of the attached report are encouraged to recommend items from it for inclusion in the Index by completing and returning the self-addressed form provided at the end of this report.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
 Major General, USA
 The Adjutant General

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DEPARTMENT OF THE ARMY
Headquarters, 93d Engineer Battalion (Const)
APO San Francisco 96370

EGFB-OP

23 September 1968

SUBJECT: Operational Report of 93d Engineer Battalion for Period Ending
31 July 1968; RCS CS FOR - 65 (RI)

CINCUSAPAC, ATTN: GPOP-DT, APO San Francisco 96558
Commanding General, USARV, ATTN: AVHGC-DST, APO San Francisco 96307
Commanding Officer, 34th Engineer Group (Const), APO San Francisco 96291

1. SECTION 1: OPERATIONS: SIGNIFICANT ACTIVITIES

a. COMMAND

(1) MISSION:

- (a) Command all assigned or attached units.
- (b) Provide operational support for US and FVMAF in area of responsibility and elsewhere as directed.
- (c) Respond rapidly to the requirements of the tactical commands when an emergency dictates.
- (d) Plan, coordinate and execute troop construction, lines of communications development, revolutionary development support and related programs.
- (e) Provide for the physical security of all personnel, equipment, facilities and construction sites of units assigned or attached.
- (f) Exercise command responsibility for all supplies, equipment, and materials assigned to or in the possession of subordinate units.
- (g) Perform other tasks as directed.

(2) COMMAND AND STAFF: LTC James Dorman, CE, 066844, remained in command of the Battalion until 8 July 1968 when Command was assumed by LTC Ralph H. Sievers Jr, CE, 069337. A majority of command and staff positions were changed during the reporting period as a result of completions of tour and to give personnel and staff type assignments.

(a) Bn XO: MAJ Robert A. Winslow, CE, 05507248

Vice: MAJ David G. Cotts, CE, 087671

Vice: MAJ Norman B. Gates, CE, 073554

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- (b) S-1: 1LT Joseph M. Nyikos, CE, 05253692
Vice: 1LT Wayne A. Theiss, CE 05422577
- (c) S-3: MAJ Robert A. Winslow, CE, 05507248
VICE: MAJ David G. Cotts, CE, 087671
- (d) S-4: CPT Kraig U. Hansen, CE, 095953
VICE: CPT John M. Door, CE 093670
- (e) EMO: CPT Francis Morasco, CE, OF 100965
VICE: CPT John F. Sheffey, CE, 105275
VICE: Francis Morasco, CE, OF 100965
- (f) Bn Chaplin: CPT Francis R. Smidt, CH 02327350
VICE: CPT Malcom J. Brummit, CH 02326135
- (g) Co A: CPT Francis M. Morasco, CE, OF 100965
VICE: CPT William A. Miller, CE, OF 102562
- (h) Co B: CPT Lyle W. Merritt, CE, OF 104198
VICE: 1LT Eugene H. Heinle, CE, 05243559
VICE: CPT Kraig U. Hansen, CE, 095953
- (i) Co C: CPT John F. Sheffey, CE, OF 105275
VICE: CPT William A. Miller, CE, OF 102562
VICE: CPT Richard J. Laycock, CE, 05023212
- (j) Co D: 1LT Harry H. Mellon, CE, OF 05241865
VICE: CPT Robert D. Wolff, CE, OF 105093

(3) The battalion remains assigned to the 34th Engineer Group (Const), 20th Engineer Brigade, and the U.S. Army Vietnam.

(4) Operational control of C Company, 69th Engineer Battalion (Const) was ended on 6 June 1968. The 702d Engineer Detachment (Power Line) was attached on 21 May 1968, and further attached to C Co. The 67th Engineer Company (Dump Truck) was attached on 1 July 1968.

(5) Stationing: With the exception of one platoon of the 67th Engineer company (DT) which is stationed at Vung Tau in support of the 36th Engineer Battalion, the remainder of the battalion is stationed at the 9th Inf Div base camp at Dong Tam, RVN (XS4744)

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b. Personnel, Administration Morale and Discipline:

(1) Personnel:

(a) At the end of the reporting period, the battalion personnel strength including attachments was as follows:

	<u>OFF</u>	<u>WO</u>	<u>EM</u>	<u>TOTAL</u>
Authorized:	36	8	987	1,031
Assigned:	36	7	1,031	1,074

(b) The following personnel turnover has occurred during this period:

	<u>OFF</u>	<u>WO</u>	<u>EM</u>	<u>TOTAL</u>
Transferred Out	9	4	171	184
Transferred In	12	5	405	422
Gain By Attachment	4	1	121	126

(c) The battalion currently employs 60 permanent hire local nationals. An additional 60 local nationals will be hired as soon as processing is complete. Necessary skilled labor has not been available to fill all requirements. Some skilled nationals have been developed through training. However the construction effort has been greatly benefited due to the employment of Vietnamese personnel.

(2) Administrative:

(a) Reports: During the period 587 battalion level recurring reports and 97 one time reports were submitted.

(3) Morale: Morale in the unit is high. The greater portion of the men in this battalion have been in country for only two to five months. They are a little short on experience, but are long on desire. A major self-help program is in progress, which involves the construction of billets and unit facilities in the evenings and on Sundays. This necessitates a long working day but has not resulted in a morale problem. Day rooms and clubs are not yet available in the Company areas but the base provides recreational facilities in clubs, swimming pool, basketball courts, library, snack bar, Post Exchange, and service club.

(4) Discipline: Disciplinary actions taken during the period were as follows:

	<u>ART 15</u>	<u>SUMMARY COURT</u>	<u>SPECIAL COURT</u>
May	20	0	1
June	16	0	0
July	31	0	1

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c. CHAPLIN ACTIVITIES:

(1) Protestant services were conducted regularly by the Battalion Chaplin during the months of May, June, and July. Catholic services were held at the Dong Tam and Bear Cat Post Chapels. Bible class and daily devotions were initiated during the period.

(2) Character Guidance classes were presented each month for all E5's and below, with NCO's participating as discussion leaders.

d. INTELLIGENCE AND COUNTERINTELLIGENCE:

(1) Unit Intelligence

(a) Providing intelligence is not the primary requirement of this unit. A continual check is made with G-2 of the 9th Infantry Division and Base Security concerning the intelligence situation for the immediate area of the unit's operation.

(b) The unit intelligence officer has granted 18 confidential clearances, and validated 4 secret clearances during the past quarterly period.

(c) Dong Tam received a total of 13 mortar attacks during the quarter, five in May, six in June and 2 in July. The battalion suffered one casualty who was slightly wounded by sniper fire.

(2) Long Thanh North Security: As of 19 June 1968, the unit ceased responsibility for Long Thanh North security due to the movement of the main elements of the unit to Dong Tam Base. However, Intelligence briefings were continued by the unit until 19 July 1968 in order to facilitate the turn over of the camp security to the new unit without a break in security, the following is a summary of the man-hours expended on security during the period:

	<u>May 68</u>	<u>19 June 68</u>
Base Camp Security	19,440 MH	12,312 MH
Job site security and compensatory time (Lost to construction effort)	5,255 MH	4,119 MH

(3) Dong Tam Security: The Dong Tam perimeter has been divided by Base Security into six (6) sectors. The Battalion is responsible for control and manning of the Delta sector security. The guards man the seven bunkers each night as well as manning two of these on a 24 hour watch. Manhours have also been expended in completing the physical requirements of the security sector. The following is a summary of the manhours expended for security during the period.

	<u>May 68</u>	<u>June 68</u>	<u>July 68</u>
Base Camp Security	14,402 MH	14,112 MH	14,330 MH
Job site security and compensatory time (Lost to construction effort)	6,708 MH	6,566 MH	7,300 MH

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The present compensatory time policy allows the Battalion OD, the Battalion SOG and the guards who have completed a twelve hour tour of duty up to 4 hours off the day following their guard duty.

e. PLANS, OPERATIONS, AND TRAINING:

(1) PRINCIPAL ASSIGNED TASKS:

(a) Construction of the Dong Tam Cantonment area to provide the following facilities for 13,500 personnel.

(1) Living quarters, administrative, operational, and Maintenance facilities.

(2) Recreation

(3) Roads

(4) Sanitary

(5) Power and water supply

(b) Construction of a 706,700 SY M&R Heliport, including Revetments for 152 rotary wing aircrafts.

(c) Operational Support as follows:

(1) Barge-offloading and stockpiling

(2) Entrenching for underground communications lines.

(3) Repair and upgrade of TL-22 and TL-25 covering 6.5 miles of road.

(d) Replacement of Binh Qui and An Quoi bridges under the LOC program.

(2) Battalion Operation: During the reporting period the Battalion has been primarily committed to Dong Tam Base construction, and the construction of the 9th Division Aviation MER. Approximately 8% of the Battalion's effort has been for upgrading and repair of routes TL-22 and TL-25. Combat support has primarily taken the form of equipment support to engineer combat battalions within the group.

(3) Plans: Standard construction plans were used as often as possible during the reporting period. However, in many cases it was not possible to use a standard plan since the structure being built did not fall within the category of standard buildings. In planning and design, the battalion strived to give the customer what he desired within the costing limitations provided by higher headquarters.

93d Engr Bn Dwg No

301-L

302-L

303-L

DRAWING

Motor Repair Shop E/709 1

Motor Repair Shop E/709 2

Motor Repair Shop E/709 3

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312-L	Self Service Supply Center, 9th S&T
313-L	TYP 40'x100' Whse 9th S&T
314-L	20'x50' Whse 9th S&T
316-L	Division Medical Supply Off Whse
321-M	Co, Hq&Sply 20'x48'
322-M	40'x100' PASCOE C/709
323-M	40'x100' PASCOE C/709
324-M	40'x100' PASCOE C/709
326-L	Kennel Support Bldg
230-L	224 Avn Opns Bldg
232-M	Laundry Facility
304-L	9th Sig Photo Lab
306-L	Maint Hangars 9th & 214th Avn Bn
227-L	Dong Tam EM Club
231-M	Commo Bldg, 52nd Sig
229-L	Dispensatory Addition, 9th Med Bn
221-K	Aircraft Ammo Storage Shed
224-L	FOL Storage LTN
225-L	Dong Tam Fire House

(4) Company Operations:

(a) Company A continued to provide 24 hour maintenance support, completed 96 battalion maintenance jobs, 108 direct support jobs, 46 allied trade jobs, and processes 2,530 requisitions. A total of 8,584 manhours and 7,436 equipment hours were expended in completing these jobs. The equipment platoon provided technical assistance and equipment support for the placement of 67,870 gallons of penepine as dust palliation on Long Thanh North roads and 9th Aviation MER at Dong Tam. Since assuming responsibility for the barge off-loading operation at Dong Tam the equipment platoon has off-loaded 13,443 tons of crushed rock. Co A has also provided equipment support to the 52nd Signal Battalion and Co D, 93rd Engineer Battalion for the emplacement of underground telephone cables and the central water distribution system respectively.

(b) Company B:

(1) During the reporting period the major portion of the Company's effort was directed to the Aviation MER, which when completed will be the largest combat heliport in the world. During the period all revetments were built, placed and filled on block 3 (there are a total of 5 blocks, only the first 4 will have revetments); 60% of the revetments were placed and filled on block 4. The second project of major importance was the hardening of the MUST hospital. During the TET offensive the hospital had received many mortar rounds resulting in the deflation of several of the inflatable mobile units. Five hugh bunkers, 75' long, 35' wide, and 23' high were designed and built to withstand a direct hit from an 82 mm mortar. The project was completed on 26 June 1968 with a total of 23,697 manhours being expended. LTC William Cassidy, Chief of Engineers cut the ribbon to celebrate the project completion on 28 June 1968. A third project that B Company worked on was the erection of 40' x 100' motor repair shops for E Co, 709th Maintenance Battalion.

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(2) In addition to these three major projects B Company has accomplished the following during the reporting period: Double surface treatment of a 400 foot length of road, over 6,000 linear foot of berm placed around a portion of the Dong Tam perimeter, the construction of eight WABTOC Billets, a grease rack, and the daily operations of a five concrete mixer batch plant which began producing concrete 18 June 1968. Approximately 50% of the earthmoving platoon's effort was placed on the shaping and stabilization of the Aviation MFR. A total of 456,000 sq yds of heliport were stabilized. The remainder of the platoon's effort was made in placing the perimeter berm and the placement of earth pads for building construction.

(3) The following is a summary of construction effort during the reporting period:

- (a) Total manhours expended on projects-88,030
- (b) Total equipment hours expended-23,800
- (c) Cubic yards of sand fill hauled-41,392
- (d) Cubic yards of concrete produced-1,691
- (e) Number of revetments completed-32
- (f) Square yards of soil stabilized-456,600
- (g) Square feet of T-17 membrane placed-57,717
- (h) Square feet of M8A1 matting placed-21,200
- (i) Square feet of buildings constructed-25,349

(c) Company C:

(1) The Company has the responsibility for construction of a complete power distribution system and the 6000 KW power plant for Dong Tam which was initiated during the reporting period. The construction of the distribution system has been further assigned to the 702nd Engineer Detachment (Power Line) which is attached to Company C. This detachment consists of thirteen (13) highly trained personnel.

(2) An 80'x144' Dong Tam Enlisted Men's Club was started and completed during the quarter. The building, which requires the use of 40 foot trusses, was completed in 43 days.

(3) Fifteen (15) 20'x48' 720 man block showers were constructed during the period, three of which still required finishing plumbing materials at the end of the period. The vertical construction was completed on 15 July 1968.

(4) The Company operated a four (4) mixer concrete batch plant, producing all of the concrete for all of its own projects and much of the concrete for self-help customers.

(5) The earthmoving platoon completed the Dong Tam ammunition supply point on 11 May 1968. Since that time the greater portion of the platoon's effort has gone to repair and upgrade of routes TL-22&TL-25. Security was provided daily by the 9th Infantry Division. In addition to upgrading of the road, it was necessary to replace a bridge on TL-22 (XSL36488) that weakened under the heavy equipment traffic. The bridge was replaced with two (2) 48 inch culverts and concrete headwalls. In addition to road upgrade the earthmoving platoon placed hardstands, constructed approximately 900 feet of berm on the Dong Tam perimeter, and prepared the site for the power plant.

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(c) The following is a summary of the construction effort during the reporting period:

- (a) Total manhours expended on projects-113,400
- (b) Total equipment hours expended-27,650
- (c) Cubic yards of concrete produced-4,212
- (d) Cubic yards of sand fill hauled-35,760
- (e) Square feet of soil stabilized-46,030SF
- (f) Square feet of buildings constructed-27,520
- (g) Cubic yards of concrete placed-1,200

(d) Company D

(1) During the reporting period the Company turned over all Long Thanh North projects to the 46th Engineer Battalion, and moved its entire operation to Dong Tam. No major projects were completed at Dong Tam, although effort was directed on two major projects. The first was the installation of a 27,000 gph water purification plant and distribution system. The plant is the first of its kind to be constructed by troop effort in Viet Nam, and will service the entire cantonment area. Two pipeline crews were organized to operate on a 24 hour basis. The second major project is the construction of six (6) 80'x144' aircraft maintenance hangars. Earth pads were placed for the first two buildings and the forms and placement of concrete pads were started.

(2) During the period a 1000 square foot dispensary addition for the 9th Medical Battalion was started and completed. Also work was initiated on a 2400 square foot communications building for the 52nd Signal Battalion. The Company was responsible for operation of a prefabrication yard, the major portion of effort expended on ripping 2"x10"s down to critically needed 2"x4"s for base construction.

(3) The earthmoving platoon expended the major portion of its effort on sand-cement stabilization of roads, road shoulder maintenance, placement of earth behind ditch revetments, and the installation of culverts. In addition they placed and compacted earth pads for vertical construction.

(4) The following is a summary of the construction effort during the period:

- (a) Total manhours expended on projects-85,280
- (b) Total equipment hours expended-23,700
- (c) Cubic yards of concrete placed-890
- (d) Cubic yards of laternite hauled-11,000
- (e) Cubic yards of sand hauled-28,650
- (f) Square feet of roads cement stabilized-70,425
- (g) Square feet of buildings constructed-5,600

(e) 67th Engineer Company (Dump Truck)

(1) During the first two months of the reporting period the Company was attached to the 36th Engineer Battalion (Const) APO 96291. The Company had two sections further attached to the 86th Engineer Battalion at Dong Tam and two sections attached to the 86th Engineer Battalion

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at Bearcat RVN. The remaining two sections were in support of the 36th Engineer Battalion. The following amount of materials were hauled at the indicated locations:

<u>Unit</u>	<u>Location</u>	<u>Material</u>	<u>Amount</u>
86th Engr Bn	Dong Tam	Rock	13,445 Cu yds
86th Engr Bn	Bear Cat	Asphalt	585 Cu yds
36th Engr Bn	Vung Tau	Rock	18,250 Cu yds

Total Cu yds 32,270

(2) The two sections supporting the 86th Engineer Battalion at Dong Tam were hauling rock from Dong Tam in support of upgrading "Peoples Road" and repairing Route QL-4, ("Peoples Road"), which is continually being mined and blown by the Viet Cong. The remaining two sections at Vung Tau were hauling crushed rock from the quarry to the barge loading site. Also these sections hauled crushed rock in the upgrading of QL-15 from Vung Tau to Baria RVN.

(3) On 1 July 1968 the 67th Engineer Company (Dump Truck) was released from the 36th Engineer Battalion and attached to the 93rd Engineer Battalion. At this time the Company was directed to support the 36th Engineer Battalion with one complete platoon and support the 86th Engineer Battalion with two sections at Dong Tam. The remaining two sections were in support of the 93rd Engineer Battalion. The following amounts of materials were hauled.

36th Engr Bn	Vung Tau	Rock	12,650 Cu yds
86th Engr Bn	Dong Tam	Asphalt	220 Cu yds
86th Engr Bn	Camp Viking	Sand	1,255 Cu yds
Ben Luc Bridge	Ben Luc	Rock	500 Cu yds

Total Cu yds 14,625

(4) At the end of July, the platoon located at Vung Tau was hauling rock to the barge site and to QL-15, the two sections supporting the 86th Engineer Battalion were hauling fill for "Camp Viking" (vicinity of My Tho) and the remaining section with the 93rd Engineer Battalion was hauling construction material from the former S-4 yard located at Camp Castle (vicinity of Long Thanh North) to Dong Tam. On 3 July 1968 the Company was assigned the task of hauling rock from University Quarry to the Ben Luc bridge site. To support the construction of a floating bridge to temporarily replace the bridge blown by the Viet Cong on 30 June. During the period, 500 cubic yards of rock were hauled for the bridge approached.

(5) During the reporting period the company displaced from Baria RVN to Dong Tam RVN. There was one casualty during the reporting period. On 11 May 1968, SP4 Columbus Cox US51607327, was in convoy proceeding through Saigon RVN when he was struck by a bullet in the right hand. A Purple Heart was awarded.

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5. Base Develop FOR OFFICIAL USE ONLY

(a) During the reporting period the 93rd Engineer Battalion completed the move from Long Thanh North to Dong Tam. The base development projects remaining at Bearcat and Long Thanh North were turned over to the 46th Engineer Battalion (Const) and the 31st Engineer Battalion (Combat). One officer and one NCO remained at Camp Castle base development office until 25 July to complete the turn over.

(b) The S-3 section has one officer and one NCO supervising Dong Tam base development. The interim directive CD 25-215-01 was received during the period authorizing facilities for an additional 6000 men to bring the total authorized cantonment up to 13,500 men cantonment. Technical assistance has been provided by companies B, C, D, for the self-help projects with-in the cantonment. Self help projects consist of BOQ's, BEQ's, Ha/Sply buildings and ditch stabilization (corrugated metal retaining walls). Both B and C companies provided concrete for self-help buildings.

(c) Construction material shortages have hampered the construction effort periodically. Shortages include 2"x4", plywood, cement, aggregate, and electrical material. D Company ripped 2"x10" lumber to supply 2"x4" for the construction effort.

(d) Following is a list of cantonment facilities for Bear Cat, Long Thanh North, and Dong Tam. The asterisked entries are those built by self-help.

Bear Cat (From 1 May 1968 to 3 July 1968)				
DESCRIPTION	FAC CODE	AUTH SF	SF CONSTRUCTED THIS PERIOD	SF CONSTRUCTED TO DATE
*EM Housing	722.10	562,588	12,000	549,388
BOQ	724.10	109,576	None	86,496
Mtr Rep Shop	214.10	102,822	None	26,430
*Ord/Sply Rm	141.85	67,608	None	68,608
Latrine	723.20	823 holes	None	823 holes
*Urinals	723.20	166 tubes	None	166 tubes
Showers	723.20	884 heads	None	901 heads
Chapel/Theater	740.18	12,840	None	4,560
Gp Whse	442.20	31,040	26,480	31,040
Bde Hq	610.17	5,760	None	4,640
*Bn Ho	141.83	24,480	None	27,840
Disp	520.10	5,600	None	5,600

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DESCRIPTION	FAC CODE	AUTH SF	SF CONSTRUCTED THIS PERIOD	SF CONSTRUCTED TO DATE
Div Chapel	740.16	3,200	None	3,280
*Grease Rack	214.11	20 each	None	11 each
Library	740.40	4,000	None	4,000
EM Club	740.60	13,170	None	13,170
NGO Club	740.47	9,280	None	4,750
Post Office	790.59	8,315	None	5,750
Mess	723.10	230,770	None	230,084
Off Club	740.48	4,800	None	2,600
Exch Whse	740.55	9,900	None	9,900
Open Storage	740.55	3,315 SY	None	584 SY

Long Thanh North (From 1 May 1968 to 3 July 1968)

*EM Housing	722.10	59,780	9,000	55,080
*BOQ	724.10	21,600	2,840	21,320
*Ord/Sply Rm	141.85	5,000	None	5,000
EM Mess	723.10	8,600	None	7,600
*Bn Hqs	141.83	1,440	None	1,440
Bn Str	723.35	2,000	80	2,000
Hangers	211.10	93,850	None	30,300
Wash Racks	116.90	20,000	15,000	20,000
Ac Op Bldg	141.12	6,020	None	1,920
Avionics	217.40	3,840	None	960
Temp Op Bldg	-----	960	None	960
Tech Supply	442.10	27,600	None	9,220

Dong Tam (From 1 May 1968 to 31 July 1968)

Veh Fuel Stor	124.50	3,000 BBL	3,000 BBL	12,000 BBL
Commo Center	131.20	2,400	None	None

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<u>DESCRIPTION</u>	<u>FAC CODE</u>	<u>AUTH SF</u>	<u>SF CONSTRUCTED THIS PERIOD</u>	<u>SF CONSTRUCTED TO DATE</u>
Avn Field Fire and Rescue	141.11	2,000	None	None
Avn Opns Bldg	141.12	11,520	None	None
Avn Opns Bldg	141.12	2,960	None	2,960
Sig Photo Lab	141.30	1,000	None	None
Bn Hqs	141.83	12,400	1,920	6,960
Bde Hq	141.86	3,000	None	10,000
Tac Opns Center	141.90	9,660	5,850	5,850
Acft Maint Hqs	211.10	92,040	None	None
Rotor Blade Shop	211.90	1,500	None	None
Avionics Rep Shop	211.90	1,200	None	None
Mtr Rep Shop(DSM)	214.10	2,400	None	None
*Mtr Rep Shop(Unit)	214.10	45,574	None	None
*Grease Rack	214.11	17 ea	None	None
Wash Platforms	214.13	24 Faucets	None	None
Sig Maint Fac	217.21	1,500	None	None
Cold Stor Reefer	432.10	16,000	None	None
GP Whse(DISCOM)	441.10	25,000	None	None
Self Ser Sup Cen	441.21	4,000	None	None
Reefer Shed	441.85	6,220	None	6,000
Gr Whse (Bn)	442.20	8,000	None	9,425
Open Stor	452.20	3,750 SY	None	2,437 SY
Hosp Supplement	510.55	2,000	None	None
Disp w/beds	520.10	5,000	1,600	3,600
Clinic	530.10	800	None	None
Dental Clinic	540.10	4,000	None	None

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DESCRIPTION	FAC CODE	AUTH SF	SF CONSTRUCTED THIS PERIOD	SF CONSTRUCTED TO DATE
Disp w/o beds	550.10	5,280	None	None
Div Hqs	610.12	30,812	None	None
Tech Sup Admin	610.35	2,000	None	None
*EM Billets	722.10	1,047,750	158,000	406,000
Latrines	723.21	70(6 hole EM) 19(2 hole Off)	71(6 hole) 13(2 hole)	71(6 hole) 13(2 hole)
Off Field Rat Mess	723.40	2,000	2,820	2,820
*Urinals	723.90	390 ea	UNK	UNK
Showers	723.90	390 hds	396 hds	396 hds
Chapel/Theater	740.10	14,000	None	3,000
*BOQ	724.10	160,710	17,000	29,000
Laundry	730.30	6,000	None	None
Library	740.40	4,000	None	4,000
Open Mess NCO	740.47	8,400	None	3,000
Exc Retail Store	740.53	11,100	None	12,000
Officer's Club	740.48	3,000	None	None
Post Office	740.59	3,750	None	2,880
Spec Ser Club	740.65	27,800	None	11,552
EM Club	740.68	28,800	12,800	12,800
Water Stor Tk	841.20	350 TG	None	None
Park Hardstands (Unit)	852.10	27,953 SY	8,900 SY	8,900 SY
Park Hardstands (DSM)	852.10	3,400 SY	3.183 SY	3,183 SY
Kennels	872.40	5,580	None	2,000

6. Training:

(a) CJT/MOS training has, as in the past, been continuous and daily.

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(b) The battalion continued emphasis on daily job site safety talks on safety problems peculiar to that project, and safety discussions with drivers during the preoperation maintenance period.

(c) All incoming personnel received a three day orientation at the 9th Infantry Division Inprocessing training facility (Reliable Academy) including such subjects as mines, booby traps, Viet Cong techniques, security, sentry duty, POW handling, and convoy procedures.

(d) The battalion training included a mandatory training program covering the Geneva Convention, military justice, psychological warfare, safety, code of conduct, safeguarding defense information, counterinsurgency, counterguerilla training, survival, escape and evasion, armed forces censorship, CBR training, gas chamber exercise, clandestine surveillance, and listening devices, field sanitation, material readiness, supply economy, Viet Nam relations, sentry duty, preventing heat injury, map reading, and M-16 training. Command information is given weekly. This training required approximately 3-4 hours per week.

7. S-4 Operations:

(a) During this period, significant changes took place in the Battalions logistical operations. The relocation of the battalion from Long Thanh North to Dong Tam required close out of all Class IV accounts in Long Binh and establishment of new accounts with Vung Tau depots. During this transition period, quantities of Class IV materials were moved from both Long Binh and Vung Tau depots. This required a split operation of the S-4 in which an officer was assigned as a full time material release expediter with a base in Long Binh. The Property Book Officer and Central Issue Facility remained at Long Thanh North throughout the period. The Dong Tam operation included warehouses and a yard for storage and issue for construction in Dong Tam. This operation was supervised by an officer with a crew of 11 to 19 men. Toward the end of the period, the major construction effort had shifted to Dong Tam and the S-4 operation was being consolidated at Dong Tam.

(b) Transportation: Transportation of Class IV materials from Vung Tau depots to Dong Tam was accomplished primarily by water movement. Use of LSU's and LCM barges has proven to be very satisfactory for movement of bulk supplies, such as rock, cement, and lumber. Water movement from Vung Tau was supplemented on two occasions by two 25 truck convoys from Vung Tau to Dong Tam. During the period, approximately 40 each 25 ton equivalent trailer loads, and, approximately 140 5 ton bridge truck loads were moved from the Long Binh area to Dong Tam.

(c) Materials Shortages: During the period a critical shortage of lumber in sizes 2"x4", 1"x8" was experienced. To prevent work stoppage, several measures were taken. Immediate relief was obtained from the stoppage of 2"x4" material by ripping 2"x10" material to size needed. Additionally, approximately 1.5 million board feet of all sizes was obtained from other depots in Vietnam by transshipment.

8. FORCE DEVELOPMENT: On 21 May 1968 the 702nd Engr Det (Power Line) was attached to the 93rd Engineer Battalion for the electrical distribution project at Dong Tam. Since C Company had the project for the

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power plant the 702nd was further attached to C Company. The 67th Engineer Dump Truck Company was attached to the 93rd Engineer Battalion on 1 July 1968. On 6 June 1968 C Company 69th Engineer Battalion (Const) was released from operational control of the 93rd Engineer Battalion and reverted to its parent battalion at Can Tho.

9. COMMAND MANAGEMENT:

(a) The battalion's command management inspection continued to provide a means of analyzing and comparing the areas of mess, supply operations, maintenance operations, construction management, administration, savings program, safety program, and reenlistment. They also provided an incentive for company competition for Best Company of the Month.

(b) Competition for Engineer Soldier, Mechanic, Operator, and Specialist Five of the month provides an incentive for MOS proficiency and knowledge of general military subjects.

10. INFORMATION: During the reporting period a total of 16 public information stories and a total of 119 hometown news releases were turned into higher headquarters.

11. CIVIC ACTION: Medical civic action in the form of weekly MEDCAP visits to outlying villages has provided treatment for approximately 750 citizens. The battalion dispensary treats 4 to 5 civilians each day. The Battalion surgeon is undertaking a program of helicopter MEDCAP's in conjunction with the Psychological Operations being carried on in the Delta.

12. MAINTENANCE:

(a) The battalion continues to enjoy a low deadline rate. The rate at the end of the reporting period was 2.88% overall deadline.

(b) A rigorous technical inspection of an average of two vehicles per day and correcting all giss contributed directly to reduction in deadline. Maintenance personnel are encouraged to use authorized cannibalization procedures. In addition materiel readiness expeditor and personal contact was employed to obtain critical parts. These procedures were used in conjunction with establishment of demand to support demand stockage of the items.

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SECTION 2: LESSONS LEARNED: COMMANDER'S OBSERVATIONS, EVALUATIONS, AND RECOMMENDATIONS

a. PERSONNEL: None

b. OPERATIONS:

(1) REVETTED WALLS

(a) Observation: There are several different methods of constructing large revetted walls. One of the major problems encountered is that of fastening walls to keep them from bowing.

(b) Evaluation: It is possible to use continuous runs of wire rope lacing the entire height of the wall prior to filling revetments with earth. To prevent an incoming round from cutting the wire rope in one place and rendering the entire strand useless, wire rope clamps should be placed at every intersection of rope inside the walls. If a loop is cut, the clamp will jam against the interior wall, preventing further weakening of the wall.

(c) Recommendation: That wire rope when available, be used as an efficient and strong method of lacing together interior and revetted walls of large bunkers.

(2) HARDENED CONCRETE IN 16S CONCRETE MIXERS

(a) Observation: When operating a 16S concrete mixer it is imperative that proper maintenance be pulled on the machine. One of the difficulties encountered is the removal of hardened concrete.

(b) Evaluation: Steel-headed hammers is one possible solution for chipping concrete from drums but they often dent the machine which increases the tendency for concrete to adhere. The use of plastic-headed mallets for knocking out concrete in drums and skips. They work very well without denting the metal.

(c) Recommendation: That plastic headed mallets be used whenever available for removing hardened concrete from 16S mixers.

(3) FILLING REVETTED WALLS

(a) Observation: Occasionally revetted walls are constructed around structures where there is little room to maneuver a frontloader to fill them. A clamshell must be used, but due to the narrow opening of the revetted wall, its use proves very tedious.

(b) Evaluation: A clamshell can be used to place the fill on top of the roof but then the problem arises of getting the fill down into the wall. Three possible solutions are (1) the use of hand shovels, (2) the use of a chute, (3) the use of a small air-droppable dozer.

(c) Recommendation: That when the strength of the roof permits, a small air-droppable dozer be utilized. An M-450 case dozer (airborne TO&E equipment) is ideal. It weighs 5 tons and can be lifted by a 20T crane to the top of revetted bunkers. Once the dozer is placed it can be maneuvered to push fill into the revetted walls.

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(4) CHUTE FOR FILLING REVETTED WALLS

(a) Observation: Revetted blast walls that are over 12 feet in height cannot be filled with a frontloader. The use of a clamshell often leads to more fill going around the wall than in it.

(b) Evaluation: A feasible solution is to fabricate a chute that will reduce the amount of spillage.

(c) Recommendation: That a prefabricated chute 5' wide at the top, 4' high, and 18" wide at the bottom be made of $\frac{1}{4}$ " steel to be used to funnel the fill into the blast wall when dropped from a clamshell. Steel brackets welded approximately 1 ft from the bottom enables the chute to rest on the top of the blast wall.

(5) DITCH STABILIZATION

(a) Observation: Erosion control must be stressed in Viet Nam. When a base camp is in the initial stages, stabilizing ditches becomes a problem of major importance.

(b) Evaluation: There are many approaches which may be taken, of which (1) gentle sloping of ditches, and (2) various stabilization methods, are the two basic ones.

(c) Recommendation: That the use of corrugated tin be used as an excellent method of stabilizing ditches. Several important steps must be followed when placing the corrugated steel: (1) A string line must be used to keep pickets straight as they are driven, (2) The pickets should be angled away from the ditch about 10 degrees from the vertical, (3) The corrugated steel sheets must be below the level of the shoulder of the ditch so water will drain over the steel into the ditch, (4) The sheets must be kept level, and hand shovels must be used to level the humps before placing sheets, (5) Pickets holdfasts placed 3 feet behind each picket and tied off with tie wire prevents the corrugated sheets from leaning toward the ditch when backfilled, (6) An overlap of at least one foot is required for the corrugated sheets and it is essential to place at the center of the overlap.

(6) CONCRETE TRUCKS

(a) Observation: Due to the non-availability of transit-mix trucks 5 ton dump trucks must be used to haul concrete from batch plant to job-sites. The shifting weight of concrete leads to sprung or bent tail gates.

(b) Evaluation: When tailgates are sprung or bent concrete flows out the rear corners of the box causing waste and adding to the maintenance problems of the dump truck.

(c) Recommendation: That corrugated or flat sheet metal be placed in the corners of the box to prevent loss of concrete when accelerating or going up hill. The sheet or tin must be cut to the health of the box, bent to fit the corners and two flanges shaped to hang over the gate and box. The metal pieces are simply inserted into the corners before loading and withdrawn before dumping.

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(7) SAFETY-20T CRANE

(a) Observation: During recent operations, one 20 ton crane damaged its own carrier. The safety cables on the underside of the boom hooked the slave cable coupling on the engine. The coupling was ripped out and resulted in 6 hours down time for the crane.

(b) Evaluation: The safety cables must be secured.

(c) Recommendation: That the safety cable be tied to the boom with small wire at 2 foot intervals to prevent the safety cable from hanging and snagging protruding parts and causing damage.

(8) DEWALT SAW OPERATION

(a) Observation: It has been found that when operating a trailer mounted DeWalt saw, the saw dust created by its own operation is sucked into the generator. In a very short time this will foul the generator and make it inoperative.

(b) Evaluation: It is not always possible to move the generator far enough from the source to curb this problem, so another solution must be determined.

(c) Recommendation: That a sheet of plywood be placed vertically between the saw and generator to virtually eliminate sawdust reaching the generator.

(9) PLACING PIPE IN CONCRETE

(a) Observation: Vertical pipes are often used as column members in construction. The problem of placing pipes in the center of large concrete slabs is encountered.

(b) Evaluation: Since there is no good way to brace these pipes while placing concrete an alternate solution must be used.

(c) Recommendation: A wooden form is placed at the point where the pipe is to be placed. Rebar is placed through all four sides into the pad. The pad is then poured around this form. Once the concrete is cured, the form is removed and the pipe is easily placed in the square hole and concrete placed around it.

(10) BENDING CORRUGATED ROOFING

(a) Observation: In standard TO&E construction it is necessary to bend corrugated metal roofing over the peaks of the building roof. If not bent it will look "sloppy" and leave a leaking roof.

(b) Evaluation: Corrugated roofing must be bent to form a roof cap tailored to the slope of the roof truss used. If the bend is not parallel with the edges of the sheet it will not match up with the tin on the roof causing possible leaks.

(c) Recommendation: That a simple jig be constructed of 4"x4" and 1"x8" material which will allow accurate bending of corrugated metal. First, a frame of 4"x4" material is constructed with appropriated dimensions

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such that a piece of tin will fit snugly inside. The frame sits on level ground. A piece of 1"x8" material is nailed atop the frame. To bend a piece of tin, a lever, constructed of a piece of 1"x8" material longer than the width of the frame, is slipped under the tin, which is flexible enough to be sprung but not bend out of the frame. The lever piece is pulled up and the tin is pinned between the piece of 1"x8" atop the frame and the force of the lever, causing it to bend the edge of the 1"x8" in the frame. The frame should be held to the ground with steel pickets when bending heavy gauge material.

(11) CONDUIT SUBSTITUTE

(a) Observation: In the past it has been difficult to get sufficient quantities of electrical conduit to meet the requirements of certain projects.

(b) Evaluation: When an electrical sub-surface power cable must be installed over a long distance the normal procedure is to utilize electrical conduit. Conduit is installed with a pull line left inside and after installation the wire is pulled through into position. If electrical conduit is not available normal water pipe cannot be used as the rough edges will cut through the insulation when the wire is pulled into place.

(c) Recommendation: That a reasonable substitute be used from fiber bituminous pipe. This pipe comes from equipped with couplings, and the interior joints are smooth. However, the pipe must be sealed with tar to make it water resistant. In placing concrete over the pipe it should be noted that the pipe exhibits low strength characteristics to any force applied downward along the longitudinal axis. To insure that the pipe does not weaken the floor, wire mesh should be used over and under the pipe and a minimum of a 3" clearance is cited in the ACI code for concrete over and under the pipe.

(12) PLACING CULVERT IN SOFT SOILS

(a) Observation: In road building operations in the Delta area of Vietnam, culvert installation is complicated by soft clay, sand, and what is best termed rice paddy "muck". A culvert installed in this material will undergo an excessive settlement unless the bearing area is increased or the bearing capacity of the underlying soil is increased.

(b) Evaluation: Structural innovations used to increase bearing areas of culverts have proven unsuccessful due to the inconsistency in rice paddy sub-base sand during the monsoon season. The solution to the problem is to increase soil bearing capacity.

(c) Recommendation: That this be accomplished by using a dam to remove the "muck" and refilling with a minimum of 2' of 3" minus base course material. The base course material is covered with a 4" layer of concrete to complete stabilization. Once the concrete has cured, the culvert is placed and covered with sand in the usual manner. From the beginning of the "muck" removal until the concrete is placed and cured, earth dams must be placed both up and down stream. A pneumatic 150 GPM pump and air compressor combination is used to keep the work area free of water.

(13) ROAD CONSTRUCTION ON SOFT SUB-BASE

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(a) Observation: Road stabilization over an unstable sub-base is one of the most persisting problems in Vietnam delta construction.

(b) Evaluation: The "muck" must be removed and a solid foundation of 3" minus rock should be placed.

(c) Recommendation: That this problem be solved by initiating construction from an already stable area with a crane and clamshell and removing a portion of the "muck" over which the new road will go. The depression is filled with 3" minus or larger base course material which is pushed in by a dozer. Once a base course pad is completed it is brought to grade with compacted sand. The road is completed in this manner one section at a time. The length of each section is determined by the length of the crane boom used in making the initial excavation for each section.

(14) EXPEDIENT WATER TANK:

(a) Observation: When a standard water storage tank cannot be obtained an expedient tank must be fabricated.

(b) Evaluation: A standard conex container can serve as an adequate substitute for storage of water.

(c) Recommendation: That a standard conex container and T-17 airfield membrane can be used to provide a satisfactory water tank. The membrane is cut in sheets to meet the inside dimensions of the conex and joined together with adhesive found in the T-17 membrane kit. The single filling and outlet pipe can be installed as a syphon without any modifications to the conex container. It is currently being used as an expedient for water storage for large 36 head showers.

c. TRAINING: None

d. INTELLIGENCE: None

e. LOGISTICS: None

f. ORGANIZATION: None

g. OTHER:

(1) OVERHEATING 290M TRACTORS

(a) Observation: While operating 290M tractors in fourth gear, it was noted that the transmissions and convertors were over heating, and at times failing.

(b) Evaluation: The tractor operators were operating their vehicles in fourth gear whenever possible. The speed limit and road conditions caused the engine to run at a low RPM while the transmission remained in fourth gear. A method had to be devised to keep engines operating at a higher RPM.

(c) Recommendation: That a shift control lever can be fabricated to block out use of fourth gear, thereby causing the tractor to operate in higher gear and higher RPM, and provide better cooling for the transmission and torque convertor.

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(2) DUMP TRUCK MAINTENANCE

(a) Observation: When using five ton dump trucks around concrete batch plants or muddy areas, material build-up between the dual wheels cause brake drums to overheat and brake linings to burn up.

(b) Evaluation: The continued operation in muddy and batch plant areas cannot be stopped. A method must be developed to save the brake systems.

(c) Recommendation: That wheels be frequently inspected and cleaned to prevent overheating.

(3) TRANSMISSION REPAIR, H906M

(a) Observation: H 906M Scoop Loaders have frequently been deadlined for repair of the transmission pump.

(b) Evaluation: Damage is caused when the operator shifts the transmission from forward to reverse without coming to a full stop. The pump must suddenly change directions and the shaft running from the transmission and torque convertor must then be installed.

(c) Recommendation: That operator be instructed against improper shifting habits to prevent unnecessary damage to the transmission and torque convertors.

(4) REINFORCING FRAME ON LITTLE FORD BITUMEN DISTRIBUTOR

(a) Observation: The frame of the little Ford towed Bitumen Distributor has proven inadequate for operations in rough graded areas.

(b) Evaluation: Reinforcing the frame after cracking has begun has proven inadequate, as more breaks continue to occur.

(c) Recommendation: That the situation be remedied by one of two means: The original frame should have the tank taken off and heavily and completely reinforced before the distributor develops and cracks, a new frame should be fabricated from salvaged truck frames, etc, to provide a heavier duty carriage assembly.

(5) 10 TON CRANE ATTACHMENT TRAILERS

(a) Observation: 10 ton crane attachment trailers frequently must be used to haul cargo other than crane attachments. The lunettes have proven inadequate.

(b) Evaluation: Lunettes have proven to be inadequate to the strain of full load operation, particularly as the loads are rarely precisely balanced. The lunettes are then subject to breaking on continued use and have cracked when empty trailers were being towed.

(c) Recommendation: That extreme care be exercised in balancing the load placed on these trailers and prohibit overloading of the trailer.

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(6) PILE DRIVING OPERATIONS

(a) Observation: During recent pile driving operations it was noted that to insure optimum driving position a minimum amount of telescoping catwalk sections had to be used.

(b) Evaluation: The basic problem with using the minimum amount of catwalk was that it was not possible to boom down when stopping for maintenance without the catwalk section coming apart.

(c) Recommendation: That a 6 foot long piece of strap steel with a nut and bolt be used to fabricate to allow the catwalk to close all the way while booming up, yet stopping the sections from coming apart while booming down.

(7) LOADING WITH FRONT LOADER

(a) Observation: It has been found that often when loading dump trucks from the side with front loaders, the pioneer tool racks mounted on the side of the bed have been bent or torn off.

(b) Evaluation: The two possible solutions are (1) extreme care in loading or (2) relocation of pioneer tool racks.

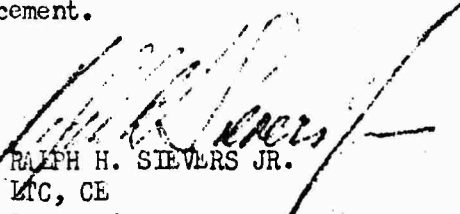
(c) Recommendation: That the tool racks be remounted between the bed and the cab, over the spare tire, to prevent damage to tool or tool rack.

(8) REMOVING BENT STEEL PILING

(a) Observation: During replacement of bent steel piling it has been quite difficult to extract the damaged piling because of the frictional resistance and the configuration of the damaged piling.

(b) Evaluation: The pipe must in some way be twisted free from its placement.

(c) Recommendation: That the piling can be removed using the following method. Insert a heavy steel bar through the diameter of the pile as close to ground level as possible. Loop a wire around one end of the steel bar and wrap at least three times around the circumference of the pile. The running end of the rope should then be placed through a snatch block deadmanned on a horizontal axis, and connected to a winch; pulling on the rope twists the pile free from its placement.


RALPH H. SIEVERS JR.
LTC, CE
Commanding

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EGE-OP (23 Sep 68) 1st Ind

SUBJECT: Operational Report-Lessons Learned RCS CSFOR-65(RI) for
Quarterly Period Ending 31 July 1968.

DA, HEADQUARTERS 34th Engineer Group (CONST) APO 96291 4 Oct 68

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D.C. 20310
Commanding General, 20th Engineer Brigade, VTN: AVBI-OS, APO 96491

1. The subject report submitted by the 93d Engr Bn has been reviewed
and is considered comprehensive and of value for documentation and
review of the reporting unit's activities and experiences.

2. This HQ concurs with the submitted report with the following
comments:

a. Recommendations stated in the below referenced "Commander's
Observations" are considered applicable but minor. They are either
normally found incorporated within an Engineer Battalion's SOP or are
published as army-wide policy.

Ref para 2b(5) page 17
Ref para 2b(6) page 17
Ref para 2b(7) page 18
Ref para 2b(8) page 18
Ref para 2b(9) page 18
Ref para 2b(14) page 20
Ref para 2g(2) page 21
Ref para 2g(3) page 21

b. Recommendation's stated in the below referenced "Commander's
Observations" are considered noteworthy to merit considered for
possible adoption army-wide. No additional amplification is required
by the HQ as the recommendations are self explanatory and the resulting
benefits obvious.

Ref para 2b(1) page 16
Ref para 2b(2) page 16
Ref para 2b(3) page 16
Ref para 2b(4) page 17
Ref para 2b(10) page 18
Ref para 2b(11) page 19
Ref para 2b(12) page 19
Ref para 2b(13) page 20
Ref para 2g(4) page 21
Ref para 2g(5) page 21
Ref para 2g(6) page 22

c. Ref para 2g(1) page 20 Concur with reservations. The shift
control lever stop should be fabricated in such manner as to be readily
removeable by maintenance personnel without damage to the tractor.
The governor must be carefully checked to insure the motor will not
exceed maximum recommended RPM.

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EGF-OP

SUBJECT: Operational Report-Lessons RCS CSFOR-65(R1) for
Quarterly Period Ending 31 July 1968

4 October 1968

d. Ref para 2g(8) page 22 It should be noted that this technique
is valid only for cylindrical piles.

FOR THE COMMANDER:

William E Emery
WILLIAM E EMERY
Major, AGC
Adjutant

Copy Furnished:
CO, 93d Engr Bn

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AVP-03 (23 Sep 68) 2nd Ind

SUBJECT: Operational Report - Lessons Learned KCS CSFOR-65(RI)
for quarterly period ending 31 July 1968.


TO: H400000, 20TH ENGINEER BRIGADE, APO 96491 11000

FROM: Colonel, United States Army Vietnam, ATTN: AVHCC-BST
APO 96375

1. Submitted in compliance with USARV Regulation 525-15 dated
15 April 1968.

2. Subject report for the 93rd Engineer Battalion has been
reviewed and is considered adequate.

FOR THE COMMANDER:


RICHARD L. TAYLOR
1LT, AGC
Assistant Adjutant

Copies furnished:

Commanding General, 8th US Army

Commanding General, 18th Engineer Brigade

NOT REPRODUCIBLE

AVHQC-DST (23 Sep 1968) 3d Ind MAJ Klingman/aja/LPN 4433
SUBJECT: Operational Report of 93d Engineer Battalion for Period Ending
31 July 1968; MCS CS FOR - 65 (R1)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 2 NOV 1968

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 July 1968 from Headquarters, 93d Engineer Battalion, and concurs with the report as modified by the preceding indorsement.

FOR THE COMMANDER:



A.R. GUENTHER
CPT. AGC
ASST. ADJUTANT GENERAL

Cy furn:
HQ 20th Engr Bde
HQ 93d Engr Bn

GPOP-DT (23 Sep 68) 4th Ind

SUBJECT: Operational Report of HQ, 93d Engineer Battalion for Period
Ending 31 July 1968, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 7 DEC 1968

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding indorsements
and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:



C. L. SHORTT
CPT, AGC
Asst AG

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

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5. AUTHOR(S) (First name, middle initial, last name)			
CO, 93d Engineer Battalion (Const)			
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13. ABSTRACT			
28			

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1 NOV 65

UNCLASSIFIED

Security Classification

29

The following items are recommended for inclusion in the Lessons Learned Index:

ITEM 1

* SUBJECT TITLE _____

** FOR OT RD # _____

***PAGE # _____

ITEM 2

SUBJECT TITLE _____

FOR OT RD # _____

PAGE # _____

ITEM 3

SUBJECT TITLE _____

FOR OT RD # _____

PAGE # _____

ITEM 4

SUBJECT TITLE _____

FOR OT RD # _____

PAGE # _____

ITEM 5

SUBJECT TITLE _____

FOR OT RD # _____

PAGE # _____

* Subject Title: A short (one sentence or phrase) description of the item of interest.

** FOR OT RD # : Appears in the Reply Reference line of the Letter of Transmittal. This number must be accurately stated.

***Page # : That page on which the item of interest is located.

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